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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/828,940	04/10/2001	Yuji Hanada	P20492	6656

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EXAMINER	
LUK, LAWRENCE W	

ART UNIT	PAPER NUMBER
2838	

DATE MAILED: 11/13/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/828,940	HANADA ET AL.	
	Examiner	Art Unit	
	Lawrence W Luk	2838	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 September 2003* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3-5,7-24 and 27* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *3-5,7-9,23,24 and 27* is/are allowed.

6)☒ Claim(s) *1,10-14,16 and 18* is/are rejected.

7)☒ Claim(s) *15,17 and 19-22* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *03 September 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 10-13 and 16 are rejected under 35 U.S.C. 102(b) as being anticipated by Jidosha et al. (63-202218).

As to claim 1, Jidosha et al. discloses the elements as claimed. Specifically, Jidosha et al. disclose in figure 1 and abtract a power supply circuit comprising: a capacitor (2) which is connected in parallel to said battery (1) to be charged by said battery; and a restricting device (3) that includes a microcomputer comprising a voltage detector, a memory and a comparator, said restricting device restricting an output current of said battery so that said output current of said battery is not interrupted by said overcurrent protective device while said capacitor is being charged with said battery.

As to claim 10, Jidosha et al. disclose in figure 1 a power supply circuit which is connected to a battery (1) having an overcurrent protective device (6), said power supply circuit comprising: a capacitor (2); a first switch (3) provided in a primary path for connecting said battery(1) with said capacitor (2); a second switch (63) provided in an alternative path for connecting said battery (1) with said capacitor (2); a voltage detector which detects a terminal voltage across said capacitor; and a charge control device (64)

which controls a switching operation of said first switch to intermittently charge said capacitor with said battery via said primary path in the case where said terminal voltage Vc across said capacitor is smaller than a predetermined threshold value; wherein said charge control device switches said primary path to said alternative path to continuously charge said capacitor with said battery via said alternative path in the case where said terminal voltage across said capacitor exceeds said predetermined threshold value.

As to claim 11, Jidosha et al. disclose in figure 1 and abstract, a power supply circuit comprising: a duration of an ON state of said first switch (3) in an intermittent charging operation, in which said capacitor (2) is charged intermittently, is shorter than a time necessary for said overcurrent protective device (6) to detect an overcurrent of said battery (1).

As to claim 12, Jidosha et al. disclose in figure 1 and abstract, a power supply circuit comprising: a duration of an ON state of said first switch (3) an intermittent charging operation, in which said capacitor (2) is charged intermittently, is shorter than a duration from the moment said battery is connected to said capacitor to the moment an output current of said battery exceeds an overcurrent protection value of said overcurrent protective device.

As to claim 13, Jidosha et al. disclose in figure 1 and abstract, a power supply circuit comprising: a capacitor (2); an adjusting condenser (3 & 2) connected in parallel with said battery (1) , said adjusting condenser., having a capacitance so that when said capacitor (2) is charged with said battery (1), said overcurrent protective device (6) is not actuated to interrupt an output current of said battery to said power supply circuit; a

switching element with which said adjusting condenser can be connected to and disconnected from said capacitor; and a charge control device which controls a switching operation of aid switching element to intermittently charge said capacitor with power output from said battery and said adjusting condenser.

As to claim 16, Jidosha et al. disclose in figure 1 and abstract, a power supply circuit comprising: a first capacitor (2) which can be connected in parallel to said battery (1); a second capacitor (1) which can be connected in parallel to said first capacitor (2); and a charge control device (6) which controls a charging operation for charging said first capacitor and a charging operation for charging said second capacitors; wherein said charge control device repeats a main charging operation and a relay charging operation alternately; wherein said first capacitor is connected to said battery with said fist capacitor being disconnected from said second capacitor, in order to charge said first capacitor with said battery in said main charging operation; and wherein said first capacitor is connected to said second capacitor with said first capacitor being disconnected from s4id battery, in order to charge said second capacitor with power output from said first capacitor in said relay charging operation.

As to claim 18, Jidosha et al. disclose in figure 1 and abstract, the power supply circuit comprising a switching device (3) provided between said battery (1) and said first capacitor (2), wherein in said main charging operation (6), said charge control device (6) controls a switching operation of said switching device (3) to intermittently charge said first capacitor (2).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claim 14 rejected under 35 U.S.C. 103(a) as being unpatentable over Jidosha et al. (63-202218).

As to claim 14, Jidosha et al. disclose in figure 1,the capacitor is charged with power output from said battery and said adjusting condenser when said switching element is ON, as taught by Jidosha et al. but exception of said capacitor is charged with power output only from said battery when said switching element is OFF. It has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitation:. Ex pane Masham, 2USPQ2d 1647 (1987).

Allowable Subject Matter

5. Claims 3-5, 7-9, 23 and 24 are allowable.

Claim 4 is allowable. The reason for allowance is that the prior art of record teaches a capacitor which is connected in parallel to said battery to be charged by said battery; a voltage detector which detects a terminal voltage across said capacitor as

teaches by Jidosha et al. but fails to disclose or reasonably suggest that a restricting device that includes a variable resistor via which said battery is connected to said capacitor, and a controller which controls said output current of said battery by varying a resistance value of said variable resistor in accordance with said terminal voltage detected by said voltage detector. It is these features found in the claim, as they are claimed in the combination, which has not been found, taught or suggested by the prior art of record, which makes this claim allowable over the prior art.

Claims 5, 23 and 24 are allowed due to their dependency on claim 4.

Claim 8 is allowable. The reason for allowance is that the prior art of record teaches a capacitor which is connected in parallel to said battery to be charged by said battery as teaches by Jidosha et al. but fails to disclose or reasonably suggest that a restricting device that includes a transistor and a controller that controls a base voltage of said transistor, the restricting device restricting an output current of said battery so that said output current of said battery is not interrupted by said overcurrent protective device while said capacitor is being charged with said battery. It is these features found in the claim, as they are claimed in the combination, which has not been found, taught or suggested by the prior art of record, which makes this claim allowable over the prior art.

Claims 3, 7 and 9 are allowed due to their dependency on claim 8.

Claim 27 is allowable. The reason for allowance is that the prior art of record teaches a capacitor which is connected in parallel to said battery to be charged by said battery; a voltage detector which detects a terminal voltage across said capacitor as teaches by

Jidosha et al. but fails to disclose or reasonably suggest that a restricting device that includes a variable resistor via which said battery is connected to said capacitor, and a controller which controls said output current of said battery by varying a resistance value of said variable resistor from a high resistance value to a low resistance value as said terminal voltage detected by said voltage detector increases. It is these features found in the claim, as they are claimed in the combination, which has not been found, taught or suggested by the prior art of record, which makes this claim allowable over the prior art.

6. Claims 15 and 17, 19-22 are objected to as being dependent upon a rejected base claim. The prior art of record fails to teach or reasonably suggest that:

Claim 15, a voltage detector which detects a terminal voltage across said capacitor, wherein in the case where said terminal voltage becomes one of equal to and greater than a predetermined voltage, said charge control device stops said switching operation of said switching element, and connects said battery and said sdjusting condenser to said capacitor via said switching element.

Claim 17, the second capacitor comprises a plurality of capacitors connected in parallel.

Claim 19, the charge control device repeats said main charging operation and said relay charging operation alternately until a terminal voltage across said first capacitor becomes one of equal to and greater than a predetermined reference voltage

at which an output current of said battery can be prevented from being interrupted by said overcurrent protective device.

Claim 20, the charge control device performs said main charging operation when said terminal voltage across said first capacitor is smaller than a predetermined threshold voltage, and performs said relay charging operation when said terminal voltage across said first capacitor is one of equal to and greater than said predetermined threshold voltage.

Claim 21, the charge control device supplies power output from said battery and said first capacitor to a load while performing said main charging operation, anal wherein said charge control device supplies power output only from said battery to said load while performing said relay charging operation.

Claim 22 is allowed due to its dependency on claim 21.

Claims 3-5 and 13-15 would be allowable if rewritten in independent from including all of the limitations of the base claim.

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lawrence Luk whose telephone number is (703)305-0617. The examiner can normally be reached on 7 a.m. to 5 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Sherry can be reached on (703) 308-1680. The fax phone numbers for the organization where this application or proceeding is assigned are

(703)305-7724 for regular communications and (703)305-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-1782.

LWL
Nov 6, 2003

Lawrence Luk
examiner
11/6/03